

Amendments to the Claims

Please amend the claims as follows:

1. (Currently amended) A method for producing of MR contrast agent, the method comprising the steps of:
 - obtaining a solution in a solvent of a hydrogenatable, unsaturated substrate compound and a catalyst for the hydrogenation of a substrate compound, wherein the substrate compound comprises imaging nuclei;
 - hydrogenating the substrate with hydrogen gas (H₂) enriched in para-hydrogen (p-¹H₂) to form a hydrogenated contrast agent;
 - exposing the contrast agent to a sequence of pulses of magnetic field for enabling spin-order to be transferred from protons in the hydrogenated contrast agent to polarization of a nucleus within the same molecule for enhancing the contrasting effects of the contrast agent adapted for use in an MR application wherein the exposing step comprises the steps of:
 - placing ~~(300)~~ a dose or part of a dose of the contrast agent in a magnetic field treatment chamber ~~(245)~~ having a magnetic field in the order of the earth magnetic field;
 - subjecting ~~(305:1-305:N)~~ the dose or part of a dose of the contrast agent to a first pulse of magnetic field having a first magnetic field strength, a first orientation and a first duration, and to one or more further subsequent pulses of magnetic field, wherein two subsequent pulses differ in at least one of the parameters: magnetic field strength, orientation or duration;
 - applying ~~(310)~~ to the dose or part of a dose of the contrast agent a magnetic field of the same order of magnetic field strength and direction as said initial field.-
2. (Canceled)
3. (Previously presented) The method according to claim 1 wherein the pulses of magnetic field are realized through the steps of:
 - rapidly increasing the magnetic field in one orientation;
 - maintaining the magnetic field at a constant level and orientation for a predetermined duration;

- rapidly decreasing the magnetic field.

4. (Previously presented) The method according to claim 1 wherein the subsequent pulses of magnetic field follow essentially immediately after each other.
5. (Original) The method according to claim 3 wherein the magnetic field is increased from an essentially zero-field to a magnetic field with a field strength in the interval of 0.1-1 mT.
6. (Original) The method according to claim 3 wherein the duration of the constant magnetic field is in the interval of 1-100 ms.
7. (Withdrawn) A computer program product directly loadable into the internal memory of a processing means within a processing unit for controlling the method and apparatus for producing MR contrast agent, comprising the software code means adapted for controlling the steps of claim 1.
8. (Withdrawn) A computer program product stored on a computer usable medium, comprising a readable program adapted for causing a processing means, in a processing unit for controlling the method and apparatus for producing MR contrast agent, to control an execution of the steps of claim 1.
9. (Withdrawn) Apparatus for producing MR contrast agent, the apparatus comprising a magnetic treatment unit (240) adapted for magnetic treatment of the contrast agent, characterised in that the magnetic treatment unit (240) comprises means for producing pulses of magnetic field in three orthogonal directions.
10. (Withdrawn) Apparatus according to claim 9 wherein said means for producing pulses of magnetic field comprises orthogonal Helmholtz pairs.
11. (Withdrawn) Apparatus according to claim 9 wherein the magnetic treatment unit (240) further comprises means for detecting the induced magnetic signal of the contrast agent.

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12. (Withdrawn) Apparatus according to claim 11 wherein the means for detecting the induced magnetic signal comprises pick-up coils in more than one direction.